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ABSTRACT

This study sought to determine student perceptions of the relative importance of three approaches toward teaching in the classroom: behaviorist, cognitive, and humanist. A survey of 320 students studying in 4 different schools (social sciences, humanities, engineering, and administration/business management) of a university found some similarities among the schools regarding the relative importance. Each school considered the items belonging to the cognitive approach as having the most relative importance, followed by the humanist and behaviorist approach items. The relative importance means were greater for the schools of administration/business management and social sciences than for other schools. The number of cognitive and humanist items showing statistically significant differences in relative importance was greater for students in their first semesters of college than for students in their last semesters. The study concludes that each student probably evaluates teaching according to his or her perception of the ideal strategy, and this evaluation is different from that made by other students. An appendix provides a copy of the survey instrument. (JDD)

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The relative importance of different psychological approaches for teaching: Implications for the quality of education

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Abstract

This work presents the results of a study to determine the perceptions that a sample of students has with regard to the relative importance of the practical applications in the classroom from three psychological approaches: the behaviorist, the cognitive, and the humanist. This study was carried out using a questionnaire on a sample of students studying different majors in a higher education institution. A total of 320 students enrolled in four different majors participated in the study. Results showed some similarities among the schools regarding the relative importance. However, it was observed that there were also different perceptions concerning the importance of a variety of aspects of teaching in the classroom. A result that was certainly consistent was that each school considered the items belonging to the cognitive approach as having the most relative importance, compared to the behaviorist and humanist approach items.

THE RELATIVE IMPORTANCE OF DIFFERENT PSYCHOLOGICAL APPROACHES FOR TEACHING: IMPLICATIONS FOR THE QUALITY OF EDUCATION

As preoccupation about education increases, and numbers cease to be considered as the most important aspect of the argument in order to give way to more "profound" questions such as quality, new thoughts and concepts are increasingly incorporated into this discussion. Thus, the idea that all children and young people have a right to education and that the solution to the problem that this involves is solely reduced to the multiplication of educational institutions is an idea for which support is diminishing. Although this quantitative vision of the problem of education is partly due to the growing demand for this service and partly to the preoccupation of extending its benefits to the largest possible number of people, the fact that the right to education is not only a problem of quantity, but also a right to quality cannot be ignored. According to García Hoz (1981), the quality of education can be defined as: "the way of being of education which unites the characteristics of integrity, coherence and efficiency". In other words, an education will be of quality when all the elements for the integral development of the person are united, when all the elements are organized and

related, and when all the elements adequately fulfill their function.

The present work confines itself to the concept of efficiency already mentioned. Therefore, when we talk of efficiency we do so in terms of an activity that has as its purpose intellectual, moral and spiritual enrichment. In this way, if we restrict the concept of quality of education this quality must be formed around the concept of efficiency. And it is within this concept of quality that the concept of teaching must be defined. This concept is implicit in the teacher characterization that McNeil and Popham (1973) propose. They express it in terms of a person implicated in an interactive behavior with one or more students with the aim of provoking a change in those students. Gage's (1979) conception of teaching describes it as every interpersonal influence which is oriented towards a modification of the present or future behavior of other people. The influence should act on the other person by perceptional or cognitive means; that is to say, by means that make the objects and events significant for the individual. The proposal of efficiency which has been made in terms of the quality of teaching necessarily involves the problem of evaluation or the problem of the form of interaction between students and teachers. However, that is not all: it will also be important, given the condition of

interaction between these groups, to determine the students' own conception of the phenomenon of teaching. The present work is dedicated, in a precise manner, to determining the conceptions that a sample of students has with regard to the relative importance of the practical application in the classroom from three psychological approaches: the behaviorist, the cognitive, and the humanist. That is to say, the present study is aimed at answering the question of which is the approach or approaches towards teaching in the classroom that students belonging to four different majors (belonging to four different schools) at a private university, consider the most important.

This study takes its origin from a previous study (Garduño and Sánchez, 1991) in which it was found that students of different majors in a private institution of higher education perceive present teaching imparted by their professors and desired teaching differently. In general it was found that although there are similarities regarding present and preferable practices, it can clearly be observed that there also exist different perceptions about a variety of important aspects regarding both present teaching given by professors in the classroom and the desired kind of teaching within each approach. Whilst the students of the School of Humanities perceive their professors as more oriented towards a type of

teaching within a humanistic framework and perceive humanistic and cognitive teaching as most desirable, the students of the School of Social Sciences, Engineering and Administration generally perceive the present teaching practices of their professors within a behaviorist and cognitive framework, but they are more interested in a cognitive type of teaching.

We can establish the importance of this study in various ways. Firstly, it will up to a point, be possible to replicate the first study. Furthermore, the results will be analyzed in terms of their implications for the theory and evaluation models of professors who consider the student. In the same way, we will analyze the possibility that the instrument developed is useful in determining differences in perceptions of the relative importance of the behaviorist, cognitive and humanist psychological approaches in other educational environments. And, lastly, conclusions regarding the training of teachers will be able to be established.

Method

This study was carried out using a questionnaire containing items about teaching practices derived from the humanist, behaviorist, and cognitive approaches on a sample of students studying different majors in a higher education institution.

Participants: A sample of 320 students studying International Relations, Graphic Design, Computer System Engineering, and Accounting participated in the study. The selection of these majors was made in a random way from the total number of majors offered by each school of the university. These majors belonged, respectively, to the Schools of Social Sciences (S.S.S.), Humanities (S.H.), Engineering (S.E) and Administration and Business Management (S.A. B.M.). The above mentioned sample was taken from the students enrolled in the initial and final courses for each major. As was the case with the majors, the selection of the courses was also random. In this way half of the students of each major were in their first semesters and the other half in their last semesters. Therefore, there were 80 students per major: 40 in their first semesters (first to third semesters), and 40 students in their final semesters (from the seventh to the ninth semester).

Instrument: "Perceptions of the Teaching Given by the Professors". This was a questionnaire containing a total 30 items derived from the three psychological approaches or schools of thought mentioned above. In order to compile the questionnaire a revision of the humanist, behaviorist and cognitive psychological approaches to teaching was made, and a series of characteristic aspects of each teaching orientation was obtained: behavior, methods, emphasis, etc. Afterwards,

these different aspects were expressed in a descriptive form in terms of teaching in the classroom by a professor, and these descriptions made up the basis of the instrument (see appendix). The number of items given for each psychological approach was ten, and each item had to be replied to according to its relative importance using a scale of "magnitude scaling" (Lodge 1981). The relative importance refers to the importance that each item has for classroom teaching in relation to the others items. To do this, the students had to establish the relative importance of each item taking the first item, to which an arbitrary relative importance of 50 points was assigned, as a base. In this way, if a student considered item 2 twice as important for classroom teaching as item 1, he would qualify his response with the number 100. If, as a further example, the student considered item 3 half as important as item 1, he would give it an importance of 25 points. Thus, in this way, the students could establish the relative importance of each item by means of their preference, and reasoning alone.

Instrument validity: The validity of the instrument was determined in the previous study which has already been referred to (Garduño and Sánchez, 1991). To summarize, first a series of interviews with experts in psychology and education was carried out, in such a way that each item was distinctive from the psychological approach from which it had been taken,

as well as to obtain feedback about the language and wording used. Afterwards, with the aim of having a numerical estimate of the validity of the instrument mentioned, a total of 9 experts were asked to indicate "Yes" or "No" in response to the question whether each item belonged to, or was characteristic of each psychological approach. The series of items given to the experts was accompanied by a group of principles, emphasis, and methods, from each psychological approach. Using this validation procedure a 91% agreement was obtained from the experts involved.

Procedure: Near the end of the semesters the chosen courses were visited and the students present were asked to answer the questionnaire. The questionnaire was handed out and the instructions read out to the students. They were asked to clarify any doubt they had concerning the scale and the items and, lastly, it was stressed that the answers would be anonymous and that they should answer honestly.

Results

Table 1 shows the means and standard deviations for each approach and school for the students of the first semesters. It is important to point out that these means and deviations correspond to the gross ratings converted into logarithms. That is to say, each rating given by the students to each of the items was converted into a logarithm. Thus, the

mean which is presented is the antilogarithm of the mean of the logarithms. Likewise, the standard deviation is that of the logarithms. Dell (1974) used the standard deviation of the logarithms as an indicator of reliability. In his own words: "The spread in the scores is related to the level of agreement among the members of a group. If all members of a group agree on a score placement then the spread will be small. A low standard deviation indicates a high level of agreement among respondents and conversely, a high standard deviation indicates a relative lack of agreement among the respondents." In order to carry out the series of Analysis of Variance which is presented further on, the converted scores were also used. This conversion of scores was made in order to avoid the great variability which can be observed in ratings when scales of magnitude scaling are used, such as that used in this study. It can generally be observed that the means are higher for the cognitive approach than for the other psychological orientations for each of the majors. That is to say, the approach that the students of the first semesters, independently of the majors they belonged to, considered the most important was the cognitive approach, followed by the humanist and behaviorist approaches. It can also be observed that the relative importance means are greater under this approach for the schools of Business Management and Social Sciences. This

result was also observed for the behaviorist and humanist approaches. Another important result is that the standard deviations are similar between each school and each approach.

Insert Table 1 about here

The following table shows the same results as the previous table but for the students in the final semesters.

Insert Table 2 about here

As we can see, in the same way as for the students in the first semesters, the cognitive approach was the most important for classroom teaching for the students in the final semesters. In this case too, the humanist and behaviorist approaches were, respectively, the next in importance. Likewise, the relative importance means are greater for the schools of Business Management and Social Sciences for each approach. In other words, the students of the schools of Business Management and Social Sciences rated each approach with a higher relative importance in comparison with the others schools. In the same way, the standard deviations are similar between each school and approach. It is interesting to note that the students of the School of Humanities in both the first and

Table 1
Means and standard deviations for each approach and school

	First semesters		
	Behaviorist	Cognitive	Humanist
School of Business Administration			
Mean log	1.78485	1.92262	1.84255
Mean	60.9327	83.6803	69.5913
S. D. log	0.28531	0.24035	0.2848
School of Humanities			
Mean log	1.69861	1.81439	1.78213
Mean	49.9583	65.2219	60.5518
S. D. log	0.30846	0.20682	0.19367
School of Engineering			
Mean log	1.70085	1.82078	1.69164
Mean	50.2171	66.1886	49.163
S. D. log	0.32976	0.21529	0.28094
School of Social Sciences			
Mean log	1.76029	1.92399	1.85079
Mean	57.5821	83.9443	70.9239
S. D. log	0.29561	0.19526	0.22787

Table 2
Means and standard deviations for each approach and school

	Final Semesters		
	Behaviorist	Cognitive	Humanist
School of Business Administration			
Mean Log	1.74607	1.88401	1.84327
Mean	55.7277	76.5615	69.7059
S. D.	0.2964	0.23517	0.23245
School of Humanities			
Mean Log	1.59674	1.79517	1.73293
Mean	39.5134	62.3976	54.0666
S. D.	0.33899	0.25503	0.23588
School of Engineering			
Mean Log	1.6572	1.82334	1.76024
Mean	45.4153	66.5791	57.5761
S. D.	0.36115	0.24274	0.27043
School of Social Sciences			
Mean Log	1.6841	1.85058	1.77363
Mean	48.3172	70.8899	59.3782
S. D.	0.32926	0.23299	0.24221

final semesters, awarded the lowest importance ratings to the behaviorist approach, although, as can be seen, the students in the final semesters considered this approach less important in comparison with the students of the first semesters.

With the aim of determining in which items statistically significant differences were to be found, the scores obtained were analyzed by means of a series of Analysis of Variance, using the schools to which the students belonged as a grouping factor. In the case when the "F" was significant among the four schools at the level of $p \leq .05$, the Tukey post-hoc comparison procedure was used to identify which pair of means were statistically different (Kirk, 1981).

The table that follows (table 3) shows the results for the items relating to the behaviorist approach for the students of the first semesters. The value of each mean for each school as well as the difference between each school can be observed. The statistically significant differences are indicated by an asterisk.

Insert Table 3 about here

As can be observed, it was the Accounting students from the School of Administration and Business Management who, in general, rated the items under this approach with the

Table 3
Means and differences of each pair of means for each school
First semesters. Behavioristic approach

		Mean	S. H.	S. E.	S. S. S.
Item 14	S. B. A.	59,180	27,769*	22,863*	5,979*
	S. H.	31,411		4,906*	21.79*
	S. E.	36,317			16,884*
	S. S. S.	53,201			
		Mean	S. H.	S. E.	S. S. S.
Item 16	S. B. A.	65,935	17,548*	0.918	1.89
	S. H.	48,387		16.63*	19,438*
	S. E.	65,017			2,808
	S. S. S.	67,825			
		Mean	S. H.	S. E.	S. S. S.
Item 24	S. B. A.	79,283	16.651*	24.983*	13.078*
	S. H.	62,632		8.332*	3.573*
	S. E.	54,300			11.905*
	S. S. S.	66,205			
		Mean	S. H.	S. E.	S. S. S.
Item 29	S. B. A.	80,332	18,405*	30,159*	10,688*
	S. H.	61,927		11.754*	7.717*
	S. E.	50,173			19.471*
	S. S. S.	69,644			

* $p \leq .05$

highest scores. On the contrary, the students from the schools of Humanities and Engineering tended to rate these items with the lowest scores. Likewise, nearly all the differences between the schools were significant at the level of 05. As we can see, only the difference between the means of items 14, 16, 24, and 29 were statistically significant. However, a systematic pattern of differences was not observed.

Table 4 shows the same type of results as the previous table, but for the cognitive approach items. In this case, differences between mean pairs were found for items 5, 8, 9, 13, 18, 23, 27, and 28.

Insert Table 4 about here

As can be observed, significant differences in eight out of the ten items were found for this approach. In the same way as for items of the behaviorist approach, the students in the schools of Humanities and Engineering rated these items with the lowest relative importance scores.

Finally, table 5 presents the results of the humanist approach items. In this section statistically significant differences between the means of each school were found in items 4, 10, 11, 21, 25, and 26.

Table 4
Means and differences of each pair of means for each school.
First semesters. Cognitive approach

		Mean	S. H.	S. E.	S. S. S.
Item 5	S. B. A.	106,071	29.352*	27.269*	13.954*
	S. H.	76,719		2,083	15.398*
	S. E.	78,802			13.315*
	S. S. S.	92,117			
		Mean	S. H.	S. E.	S. S. S.
Item 8	S. B. A.	86,727	25.465*	1,075	7.098*
	S. H.	61,262		24.390*	32.563*
	S. E.	85,652			8.173*
	S. S. S.	93,825			
		Mean	S. H.	S. E.	S. S. S.
Item 9	S. B. A.	100,808	25.117*	20.869*	1,793
	S. H.	75,691		4.248*	26.910*
	S. E.	79,939			22.662*
	S. S. S.	102,601			
		Mean	S. H.	S. E.	S. S. S.
Item 13	S. B. A.	85,712	17.477*	25.218*	9.534*
	S. H.	68,235		7.741*	27.011*
	S. E.	60,494			34.752*
	S. S. S.	95,246			
		Mean	S. H.	S. E.	S. S. S.
Item 18	S. B. A.	93,465	18.370*	18.563*	1,487
	S. H.	75,095		.193	19.857*
	S. E.	74,902			20.050*
	S. S. S.	94,952			

(table continues)

		Mean	S. H.	S. E.	S. S. S.
Item 23	S. B. A.	81,961	14.518*	18.880*	7.066*
	S. H.	67,443		4.362*	21.584*
	S. E.	63,081			25.946*
	S. S. S.	89,027			
		Mean	S. H.	S. E.	S. S. S.
Item 27	S. B. A.	93,985	15.282*	30.904*	4.958*
	S. H.	78,703		15.622*	10.324*
	S. E.	63,081			25.946*
	S. S. S.	89,027			
		Mean	S. H.	S. E.	S. S. S.
Item 28	S. B. A.	88,425	24.910*	27.062*	1,495
	S. H.	63,515		2,152	26.405*
	S. E.	61,363			28.557*
	S. S. S.	89,920			

* $p \leq .05$

Insert Table 5 about here

As with the previous approaches, the students of the schools of Humanities and Engineering rated these items with the lowest scores. As can be seen, the greatest difference occurred in item 25 between the schools of Social Sciences and Engineering, and Business Management and Engineering, although there were also important differences between the relative importance in items 11 and 21 between the same schools. The great majority of the differences between the means were statistically significant and the differences were generally large.

With regard to the relative difference given to the items by the students in the final semesters, the following table presents the means and differences between them for the behaviorist approach for the students of the different schools.

Insert Table 6 about here

In reference to this approach with the lowest scores of relative importance, it is important to emphasize the fact that although the students of the schools of Humanities and Engineering did not rate all the items in which statistically

Table 5
Means and differences of each pair of means for each school.
First semesters. Humanistic approach

		Mean	S. H.	S. E.	S. S. S.
Item 4	S. B. A.	100,465	23.008*	22.713*	9.897*
	S. H.	77,457		.295	13.111*
	S. E.	77,752			12.816*
	S. S. S.	90,568			
		Mean	S. H.	S. E.	S. S. S.
Item 10	S. B. A.	57,999	5.247*	19.549*	6.366*
	S. H.	52,752		14.302*	11.613*
	S. E.	38,450			25.915*
	S. S. S.	64,365			
		Mean	S. H.	S. E.	S. S. S.
Item 11	S. B. A.	110,318	21.799*	35.252*	15.305*
	S. H.	88,539		13.473*	6.474*
	S. E.	75,066			19.947*
	S. S. S.	95,013			
		Mean	S. H.	S. E.	S. S. S.
Item 21	S. B. A.	58,741	1,318	28.931*	9.032*
	S. H.	57,423		27.613*	10.350*
	S. E.	29,810			37.963*
	S. S. S.	67,773			
		Mean	S. H.	S. E.	S. S. S.
Item 25	S. B. A.	84,871	18.111*	37.499*	1,732
	S. H.	66.76		19.388*	20.043*
	S. E.	47,372			39.231*
	S. S. S.	86,603			

(table continues)

		Mean	S. H.	S. E.	S. S. S.
Item 26	S. B. A.	77,493	9.585*	17.210*	10.204*
	S. H.	67,908		7.625*	19.789*
	S. E.	60,283			27.414*
	S. S. S.	87,697			

* $p \leq .05$

Table 6
Means and differences of each pair of means for each school. Final semesters. Behavioristic approach

		Mean	S. H.	S. E.	S. S. S.
Item 3	S. B. A.	74,029	22.192*	1,722	1,676
	S. H.	51,837		23.914*	23.868*
	S. E.	75,751			.046
	S. S. S.	75,705			
		Mean	S. H.	S. E.	S. S. S.
Item 12	S. B. A.	53,958	17.048*	17.214*	.095
	S. H.	36,910		.166	16.953*
	S. E.	36,744			17.119*
	S. S. S.	53,863			
		Mean	S. H.	S. E.	S. S. S.
Item 16	S. B. A.	73,061	26.466*	17.921*	22.594*
	S. H.	46,595		8.545*	3.872*
	S. E.	55.14			4.673*
	S. S. S.	50,467			
		Mean	S. H.	S. E.	S. S. S.
Item 17	S. B. A.	44,913	27.721*	1,478	9.346*
	S. H.	17,192		26.243*	18.375*
	S. E.	43,435			7.868*
	S. S. S.	35,567			
		Mean	S. H.	S. E.	S. S. S.
Item 24	S. B. A.	62,738	23.958*	26.452*	16.736*
	S. H.	38.78		2,494	7.222*
	S. E.	36,286			9.716*
	S. S. S.	46,002			

* $p \leq .05$

significant differences were found, this phenomenon did occur in some of the items. A particular case is that observed in item 17 which was rated as especially low by the students of the School of Humanities. The items in which statistically significant differences were found were: 3, 12, 16, 17, and 24. Again, although a consistent pattern of differences between the means cannot be observed, it is important to emphasize that they were nearly all significant.

As for the results for the cognitive approach items (table 7), significant differences were only found in three items. This finding contrasts with the results of the students of the first semesters, where significant differences were found in eight out of ten of the items within this approach.

Insert Table 7 about here

In a manner similar to that of the students of the first semesters, the majority of the differences were significant. The students of the School of Humanities again rated these items with the lowest relative importance scores compared to the students of the other schools. However, the students of the School of Business Management rated these items with the highest relative importance scores. An interesting fact is that the Engineering students rated these items in a similar way as

Table 7
Means and differences of each pair of means for each school.
Final semesters. Cognitive approach

		Mean	S. H.	S. E.	S. S. S.
Item 5	S. B. A.	92,310	36.464*	10.091*	4.579*
	S. H.	55,846		26.373*	31.88*
	S. E.	82,219			5.512*
	S. S. S.	87,731			
		Mean	S. H.	S. E.	S. S. S.
Item 8	S. B. A.	80,626	19.337*	2,260	3.118*
	S. H.	61,289		17.077*	16.219*
	S. E.	78,366			.858
	S. S. S.	77,508			
		Mean	S. H.	S. E.	S. S. S.
Item 9	S. B. A.	93,156	41.004*	12.542*	18.241*
	S. H.	52,152		28.462*	22.763*
	S. E.	80,614			5.699*
	S. S. S.	74,915			

* $p \leq .05$

the students of the other schools. The largest differences were between the School of Business Management and Humanities.

Finally, table 8 presents the results for the Humanist approach. Here, significant differences were only found in three items. The items in which significant differences between the schools were found were numbers: 4, 21 and 25. As with the results from the cognitive approach, the means for each item were similar for all the schools. Nearly all the differences between the means were statistically significant as well.

Insert Table 8 about here

Conclusions

We can establish different conclusions and implications for the phenomenon of the quality of education and for the evaluation of teachers by the part of students. Firstly, it is true that there are general similarities among the schools regarding the relative importance, it can be clearly observed that there are also different perceptions concerning the importance of a variety of aspects of education in the classroom. Although this finding was present between each of the different schools, it was most evident between the schools of Humanities and Engineering, who rated the items in particular and the

Table 8
Means and differences of each pair of means for each school. Final semesters. Humanistic approach

		Mean	S. H.	S. E.	S. S. S.
Item 4	S. B. A.	83,289	16.444*	6.483*	3.628*
	S. H.	66,845		9.961*	20.072*
	S. E.	76,806			10.111*
	S. S. S.	86,917			
		Mean	S. H.	S. E.	S. S. S.
Item 21	S. B. A.	65,622	22.839*	10.583*	13.908*
	S. H.	42,783		12.256*	8.931*
	S. E.	55,039			3.325*
	S. S. S.	51,714			
		Mean	S. H.	S. E.	S. S. S.
Item 25	S. B. A.	82,565	26.968*	25.694*	27.765*
	S. H.	55,597		1	.797
	S. E.	56,871			2
	S. S. S.	54,800			

* $p \leq .05$

approaches in general with the lowest relative importance scores, and the Schools of social sciences and Business Management who rated each approach with the highest scores. However, a result that was certainly consistent was that each school considered the items belonging to the cognitive approach as having the most relative importance, compared to the behaviorist and humanist approach items. In the same way, all the schools rated the humanist approach as the next most important. Finally, all the schools rated the behaviorist approach as the least relatively important for classroom teaching. Similarly, although the relative importance means for each approach in general and for each item in particular were different, very different in some cases, these means showed a certain consistency between the schools. In other words, despite the differences found both between the means of the approaches and of the items, an item or an approach considered very important by one school was also considered important by the other schools.

An important results in the items in which statistically significant differences were found, is that the quantity of items showing these differences is much greater for the students of the first semesters in the cognitive and humanist approaches. Thus, out of eight items in which significant differences were observed between the schools for the group of students in the

first semesters, significant differences for the students of the last semesters were only found in three items. Similarly, out of six items for the humanist approach, where significant differences between the means of the students in the first semesters were found, for the students of the final semesters significant differences were only found in three of the items. This, however, was not the case for the behaviorist approach items. Here, there were four items with significant differences between the schools for the first semesters, but five items with significant differences between the schools of the last semesters. On the other hand, these differences observed between the schools for the students of the final semesters in the items within the cognitive and humanist approach had also been found for the same items for the students of the first semesters. This was not the case for the behaviorist approach items. On the contrary, nearly all the items showing significant differences were different for the students of the first and last semesters.

From the results obtained we can say that the same results were found as in the study already mentioned. That is to say, by virtue of there exists a similarity between the concept of relative importance, and the 'should be' concept which refers to the desired status of each item in each approach, we find that in both studies the students of each

school considered the cognitive approach as the most important for classroom teaching. In a study on institutional objectives (Garduño, 1990), it was found that the correlation between a scale of magnitude scaling, like that used in this study, and a scale used to measure the desired status of such institutional objectives, was significant for each objective.

With regard to the value that student teacher evaluation scales have as the only instrument of judgment for the performance of teachers in the classroom, which are often used as a basis for dismissal, it will be important to consider the results of this study. Given that different perception exist about the relative importance of the different teaching strategies according to the psychological approaches presented as well as about different teaching aspects not considered in this study, it is probably correct to suppose that the students´ evaluations of a present teaching situation are influenced by such perceptions. In other words, a student probably evaluates the present teaching of his teacher according to his/her perception of the ideal strategy, and this evaluation is different to that made by another student; this effect probably being maximized when the student belong to different specialties. The problem of teacher evaluation using the students´ perceptions is subject to the problem of actual conceptions of

classroom teaching and, as this study has demonstrated, different conceptions about desired education exist.

A last conclusion is that concerning the value of the instrument as an important element in experimental investigation about teacher evaluation, as well as in the fields of training and teacher evaluation. The use of this instrument can produce important information about areas of deficiency, and help establish value judgments on teachers´ teaching practices. However, for global evaluation of teaching, taking our pervious observation into account, it is primarily recommendable to see this instrument in combination with other techniques.

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Appendix

List of questions in the instrument Perceptions of the Teaching Given by the Professors

1. Having a professor who allows me to choose what I want to learn.
2. Having a professor who teaches me to master a specific topic of study through small and successive steps.
3. Having a professor who gives me immediate and descriptive information about what is correct and incorrect in my work.
4. Having a professor who, instead of being an authority in the classroom, is a guide and facilitator in learning the things that interest me.
5. Having a professor who teaches me to understand and solve a problem and to contrast the solution with my knowledge.
6. Having a professor who shows him/herself as a person, who does not hide him/herself behind a mask, and who reveals his/her own feelings, emotions, and thoughts.
7. Having a professor who takes into consideration my own knowledge and abilities for the learning of new and more complex knowledge and abilities.
8. Having a professor who helps me to organize my ideas in such a way that I discover the new knowledge to be learned.

9. Having a professor who helps me to understand the cause of my mistakes in the learning of a piece of information or a skill so that I can learn from them.

10. Having a professor who understands my inner and private world and who recognizes my responsibility for taking decisions and my compromise between my own existence and learning.

11. Having a professor who has respect for the students and who treats them in the same way as he would like to be treated himself.

12. Having a professor who considers that my learning can only be achieved using incentives and rewards that he operates.

13. Having a professor who promotes thought about different perspectives and alternatives of a theme, taking into account concepts of the same subject and other subjects and relating the new concepts to ideas within and outside the subject.

14. Having a professor who prepares the classroom atmosphere (rewards, distribution of chairs, etc.) in such a way that it encourages my learning.

15. Having a professor who understands my own interests and values as a person, and who teaches the subject matter in a context of meaningful activities for me.

16. Having a professor who emphasizes the learning requirements in terms of behavior for the achievement of an objective as well as emphasizing the breakdown of the objective into its parts.

17. Having a professor who accepts my passivity as a student when giving his class.

18. Having a professor who teaches me the clear meaning of what I have to learn and know, and why it is important.

19. Having a professor who encourages the self-evaluation of my own learning as the only meaningful way of evaluation.

20. Having a professor who considers my overt academic behavior as the only criterion of learning, with no regard to my feelings and mind.

21. Having a professor who encourages in me the capacity to identify myself with the feelings and system of values of other human beings

22. Having a professor who considers my intellectual aspect as more important than my integral development as a human being.

23. Having a professor who connects the new concepts to my experience by using analogies, metaphors, examples, explanations and demonstrations.

24. Having a professor who looks for a way of motivating my behavior in the classroom using incentives and rewards.

25. Having a professor who encourages the acceptance of myself as a person as well as my own self awareness and development.
26. Having a professor who helps me to develop and to link my personal freedom with my social responsibility, developing a deep feeling of connection with the world around me.
27. Having a professor who encourages thinking about and evaluating my ideas as well as the ideas that my classmates express, so that I can establish or develop a new point of view about the topic.
28. Having a professor who accepts my own interest in understanding the study material.
29. Having a professor who congratulates me and rewards me for my successes in my learning.
30. Having a professor who shows me how to carry out a new learning task in such a way that I can perform it again by myself.